

SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
COLLEGE OF DESIGN AND ENGINEERING
Website: <https://cde.nus.edu.sg/ece>

Area: Microwave & Radio Frequency (MWRF)

Host: Ms Hou Linxin

TOPIC	:	Radar-based Soft Fall Detection Using Transformer
SPEAKER	:	Mr Zhou Wenren Graduate Student, ECE Dept, NUS
DATE	:	Thursday, 10 July 2025
TIME	:	4:00PM to 5:00PM
VENUE	:	Join Zoom Meeting https://zoom.us/j/96202494506?pwd=ZRYNPneIGMlcfqG9NBIVDe3AZiKAYX.1 Meeting ID: 962 0249 4506 Passcode: 3fbKdS

ABSTRACT

Global aging is inevitable, and the growing number of elderly people who live alone leads to the rise of demand for elderly-care technologies such as fall detection systems. Radar-based fall detection methods have been proven to be sufficient for indoor daily monitoring. In this paper, a millimeter-wave frequency modulated continuous wave (FMCW) radar-based system using the Transformer for soft fall detection is proposed. The temporal and contextual information in soft fall motions, which was not considered in previous literature, is studied. The pattern contour-confined Doppler-time (PCC-DT) map is used to filter out irrelevant and interferential signals. The experimental results support that the proposed method can detect both sudden and soft fall motions with improved accuracy and efficiency.

BIOGRAPHY

Mr. Zhou Wenren is currently pursuing a Ph.D. degree in the Department of Electrical and Computer Engineering at NUS. His supervisor is Prof. Qiu Chengwei, and co-supervisor is Prof. Guo Yongxin. His research focuses on Smart Sensing and AI for Biomedical Applications.

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